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Encl: (1) The Spectrum Reallocation Final Plan

1. Enclosure (1) is an article submitted from the MID-LANT Area Frequency Coordinator for inclusion in the Electromagnetic Compatibility Newsletter prepared by the Naval Surface Warfare Center in Dahlgren under the direction of SPAWAR 10-12A.

2. The article discusses the National Telecommunications and Information Administration (NTIA) Spectrum Reallocation Final Report which is unclassified and open to the public. Recommend the article for publication in EMCAP news.

3. For any additional information or questions, please contact Mr. Mike Stewart, Code 10-12Q, (703)602-3192.

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By direction

THE SPECTRUM REALLOCATION "FINAL" PLAN

by

Mikel R. Ryan

On 10 February 1995, U.S. Secretary of Commerce Ronald H. Brown issued the National Telecommunications and Information Administration's (NTIA's) "Spectrum Reallocation Final Report." Mandated by the Omnibus Budget Reconciliation Act of 1993, this report identifies 235 MHz of radio frequency bands for reallocation from Federal (to include DoD) to non-Federal or mixed use as shown in the table below.

BANDS	REALLOCATION TIMETABLE
1390-1400 MHz	January 1999
1427-1432 MHz	January 1999
1670-1675 MHz*	January 1999
1710-1755 MHz*	January 1999/2004**
2300-2310 MHz	August 1995
2390-2400 MHz	Complete
2400-2402 MHz	August 1995
2402-2417 MHz	Complete
2417-2450 MHz*	August 1995
3650-3700 MHz*	January 1999
4635-4660 MHz	January 1997
4660-4685 MHz	Complete

\* These bands are designated "MIXED USE"

\*\* The reallocation will be moved forward for the top 25 U.S. cities to January 1999. Only existing Federal agencies will continue to operate within 150 km of these cities. All other areas will be reallocated in January 2004.

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Four of the reallocated bands are designated "MIXED USE." The definition/guidance provided for this term is quoted below:

"The potential use of these frequencies by the Federal Government must be substantially less, as measured by geographic area, time, or by other means, than the potential use to be made by the non-Federal sector."

Roughly translated, this means that limited amounts of some classes of Federal transmitters will be conditionally permitted to operate in these bands. In addition to this clemency, the transfer of certain bands at specified locations would be delayed (in many cases indefinitely) to protect certain high-value users.

There are three primary objectives to this legislation. The first is to increase the efficiency of spectrum use and the effectiveness of the spectrum management process. The second, to promote and encourage the use of new spectrum-based technologies in telecommunications applications. The third, to add several billion dollars to Government coffers through competitive bidding (auctions) for the reassignment and licensing of the reallocated bands to the private sector.

These noble goals are of little comfort to those spectrum orphans who will be expected to:

- locate unoccupied Government spectrum and get replacement assignments for their equipment.
- in some cases, totally re-engineer their equipment to fit the characteristics and standards of the new band; an expensive burden indeed. The **user** will be responsible for funding/converting/retuning/replacing his displaced frequencies and equipment.

The NTIA was tasked to research and identify the spectrum for reallocation. To make the transfer as painless and efficient as possible, the NTIA sought out the Government frequency bands that:

- were not required for the Government's present or future needs.
- if transferred, would not result in costs or loss of services that are excessive in relation to the benefits.
- have the greatest potential for productive uses and public benefits (and auction profits) when sold to the private sector.

The current USN usage for each of the proposed bands is summarized below:

- **1390-1400 MHz:** This band is used by long-range air defense radars, air traffic control facilities, military test range telemetry links (e.g., Data Link System/RAJPO), RPVs and tactical radio relays. In 1999, the RAJPO and RPV assignments in this band (and the 1427-1432 MHz band) will not be deleted, but rather permitted to operate on a non-interference basis to existing and future non-Federal assignments.
- **1427-1432 MHz:** This band is used for tactical radio relay communications and test range aeronautical telemetry and telecommand.
- **1670-1675 MHz:** This band is used for meteorological services.
- **1710-1755 MHz:** This band is used extensively for fixed microwave communications, tactical radio relay and airborne telemetry systems.
- **2300-2310 MHz, 2390-2400 MHz and 2402-2450 MHz:** These bands are used for telemetry systems and radar testing systems such as target scattering and enemy radar simulators.
- **3650-3700 MHz:** This band is used for air traffic control radars (e.g., AN/SPN-43) on board aircraft carriers. Reallocation of this band would be delayed five years to re-engineer the USN radars operating in coastal waters.
- **4635-4660 MHz and 4660-4685 MHz:** These bands are used for airborne military and high-powered tropospheric scatter communications, digital data communications (USN Cooperative Engagement Capability Data Distribution System) and target control systems (e.g., AN/TSW-10(V)).

Where the USN is concerned, the NTIA seems to have done their job in minimizing the impact. Of the myriad types of emitters we use, just a few dozen would be affected to any extent. Most of these would lose a fraction of their allocated operating band, meaning their operators will merely have to shift their assignments a few MHz up or down. Only a few major systems, like the AN/SPN-43 ATC radar, are seriously affected.

However, despite the word "FINAL" in the title of the reallocation report, expect the plundering of DoD's spectrum to continue. As the profits from ongoing spectrum auctions climb (tally to date:

\$7.7 billion), the pressure to surrender more of our electromagnetic assets will increase. Some of the bands we can expect to defend in the coming years are:

<b>225-230 MHz</b>	<b>1845-1850 MHz</b>
<b>380-400 MHz</b>	<b>3625-3650 MHz</b>
<b>1755-1760 MHz</b>	<b>5850-5925 MHz</b>

For more information, contact your DoD Area Frequency Coordination Office. Copies of the NTIA's reallocation report are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, telephone (703) 487-4650. Copies are also available electronically by:

- connecting through a modem to (202) 482-1199, or
- connecting through the Internet to <http://gopher.ntia.doc.gov> or <http://www.ntia.doc.gov>.